



Thomas Cove Water Quality Report for 2015

ARTESIAN WATER COMPANY • 664 CHURCHMANS ROAD • NEWARK, DELAWARE 19702

PWSID# DE00A0683

SPRING 2016

Superior Water Quality

We are pleased to present our annual Water Quality Report for 2015. Each spring this report is published in accordance with the requirements of the United States Environmental Protection Agency (EPA) and the Delaware Division of Public Health (DPH). The Water Quality Report describes 2015 results from our monitoring and testing data and valuable information relating to the quality of our water supply.

Artesian is committed to providing reliable and high quality water to our customers. Artesian crews work around-the-clock to monitor water quality and supply. Our treatment includes disinfection, various filtration processes, pH adjustment, and corrosion control as needed to ensure our systems are meeting all state and federal regulations. In addition to our treatment, we routinely monitor for Organics, Inorganics, Metals, Disinfection By-Products, Lead and Copper, and Radionuclides to make certain our water quality is exceeding standards.

Since 1905 Artesian has provided safe drinking water and excellent customer service to the people on the Delmarva Peninsula. We are proud to report that our water again fully complies with national and state drinking water standards.

We encourage you to take the time to review the report. If you have any questions about this report or the quality of your tap water, call us at (302) 453-6930 or (800) 332-5114. Our Customer Service Representatives and our Water Quality Department are ready to assist you.

This report is also available on our website at www.artesianwater.com. As always, it is our pleasure to serve you.



THOMAS COVE WATER QUALITY REPORT

Information concerning
public water systems of
Artesian Water Company

DE00A0683



www.epa.gov/watersense/

A Safe Water Source

The Thomas Cove public water system is supplied with water from three (3) wells located in southern New Castle County. These wells are in the Mount Laurel and Potomac formations. Our ground water wells use the natural filtering capability of the aquifer to remove harmful bacteria and other substances from the water. These wells are located in confined aquifers that provide additional protection from surface-borne contaminants. The treatment stations for the Thomas Cove water system use the best available technology to ensure that we are providing water that meets or exceeds all Environmental Protection Agency (EPA) and State Division of Public Health water quality parameters. Regular testing also helps us ensure high quality.

The Division of Public Health, in conjunction with the Department of Natural Resources and Environmental Control, has conducted source water assessments for nearly all community water systems in the state of Delaware. The Source Water Assessment report can be found on the Delaware SWAPP website www.delawaresourcewater.org/assessments or contact Artesian's Water Quality Department at (302) 453-6900 to obtain a copy.

Water Treatment Investments

As reported in the 2014 Water Quality report, Artesian detected Perfluorooctane Sulfonate (PFOS) as a result of testing conducted in accordance with the Environmental Protection Agency's (EPA) Third Unregulated Contaminant Monitoring Rule (UCMR3). Upon detection, Artesian discontinued the use of the wells where the contamination was identified. In 2015 we installed new carbon filtration units and aeration equipment to remove the newly detected contaminant to levels of non-detect at our Jefferson Farms treatment facility in New Castle County.



At our Bayville water treatment facility in Sussex County, we reconfigured the treatment equipment, increasing treatment capacity to 2.0 million gallons per day (MGD) from 1.8 MGD to supply our growing customer base in this area.

In 2015 Artesian made capital investments totaling \$20.7 million to improve its systems. Artesian works diligently to upgrade our treatment facilities to ensure water quality meets and exceeds all standards. In the rare event new contaminants are detected or older treatment technologies are becoming inadequate, Artesian immediately removes a plant from service to be certain we continue to provide superior water quality throughout the Delmarva Peninsula.



In 2014 Artesian piloted new technology utilizing microfiltration membranes at multiple sites across Delaware. In 2015 we installed a full sized unit at our Wilmington Airbase treatment plant in New Castle County. The new technology is expected to produce significantly less backwash water than our older technology, resulting in an environmentally friendly plant located at a central location in our New Castle County system.



Proactive Upgrades to Aging Water Mains and Hydraulic Improvements for Reliability



During 2015 Artesian replaced over three miles of water main in five residential developments. Artesian focuses on ensuring the delivery of reliable, high quality water to our customers. By systematically addressing where and how often water main maintenance is needed and by continually renewing our infrastructure, we avoid large, unexpected challenges to the provision of reliable and safe water.

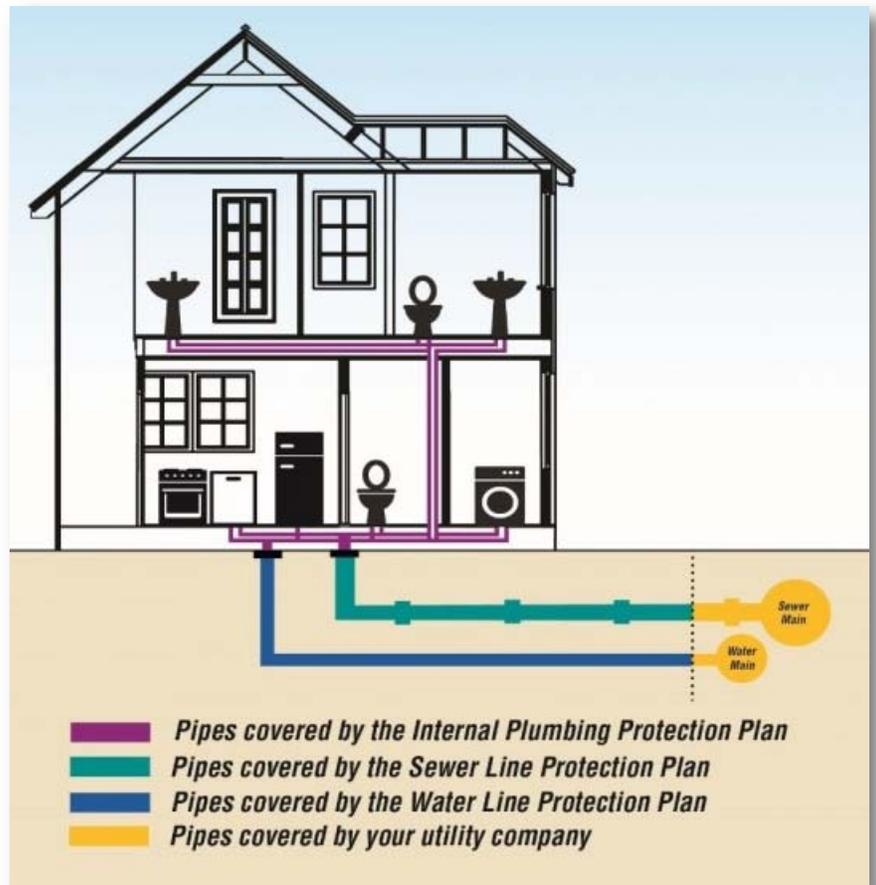
Service Line Protection Plans

We encourage all of our customers to enroll in our Water, Sewer and Internal Plumbing Protection Plans.

As a homeowner, you are responsible for the maintenance of the water and sewer lines that run from your house to the street, as well



as all of the internal water and wastewater pipes. Clogs, breaks, blockages from tree roots, and even pipe collapses can and do happen without warning.



 **Enjoy PEACE OF MIND!**

The Plans are Easy, Affordable and Convenient.

- Emergency expert service repairs around-the-clock, managed by an experienced Artesian team
 - No deductible or hidden service fees
 - Easy billing
 - No negotiating with contractors or plumbers
 - Easy monthly billing added to your existing water bill
- Water Line Protection Plan - \$5.50/month
- Sewer Line Protection Plan - \$11.00/month
- Internal Plumbing Protection Plan - \$8.50/month

Enroll online at www.artesianwater.com Or call 302.453.6930



Thomas Cove Water Quality Report for 2015

PUBLIC WATER SYSTEM I.D. DE00A0683

In order to ensure that tap water is safe to drink, the United States Environmental Protection Agency (EPA) prescribes regulations which limit the amount of contaminants in water provided by public water systems. The table below lists all of the drinking water contaminants that we detected during 2015. Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and, in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions below the table.

	Unit of Measure	Highest Level Allowed (MCL)	Ideal Goal (MCLG)	Highest Level Detected	Range of Level Detected	Violation?	Likely Source of Contamination
Inorganic Contaminants							
Barium	ppm	2	2 ⁶	0.063	0.022 – 0.063	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Fluoride	ppm	2	2 ⁶	0.696	0.263 – 0.696	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.

Radiological Contaminants

Radium, combined	pCi/l	5	0	0.1	0 – 0.1 ⁷	No	Erosion of natural deposits.
Gross Alpha	pCi/l	15	0	2	0 – 2 ⁷	No	Erosion of natural deposits.

Disinfection/Disinfection By-Products

Chlorine (free and total)	ppm	4 (MRDL)	4 (MRDLG) ⁵	2.18	0 – 2.18	No	Disinfectant used in drinking water industry.
Haloacetic Acids, total ³	ppb	60		4.34	4.34 ⁴	No	By-product of drinking water chlorination.
Dichloroacetic Acid	ppb	n/r		2.75	2.75	n/a	
Trichloroacetic Acid	ppb	n/r		1.59	1.59	n/a	
Trihalomethanes, total ³	ppb	80		10.06	10.06 ⁴	No	By-product of drinking water chlorination.
Bromodichloromethane	ppb	n/r		1.96	1.96	n/a	
Chloroform	ppb	n/r		8.10	8.10	n/a	

	Unit of Measure	Action Level (AL)	Ideal Goal (MCLG)	90th Percentile	No. of Sites Over AL	Violation?	Likely Source of Contamination
Lead & Copper²							
90th Percentile Lead	ppb	15	0	<2 ⁸	0	No	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
90th Percentile Copper	ppm	1.3	1.3 ⁶	0.0526 ⁸	0	No	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.

	Maximum Contaminant Level Goal	Total Coliform Maximum Contaminant Level	Highest No. of Positive	Fecal Coliform or E. Coli Maximum Contaminant Level	Total No. of Positive E. Coli or Fecal Coliform Samples	Violation?	Likely Source of Contamination
Microbiological Contaminants Total Coliform	0	1 Positive monthly sample	1		0	No	Naturally present in the environment.



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PUBLIC WATER SYSTEM I.D. DE00A0683

	Unit of Measure	Highest Level Allowed (MCL)	Average Level Detected	Range of Level Detected	Violation?	Likely Source of Contamination
Unregulated Contaminants						
Alkalinity, total	ppm	n/r	143	104 – 181	n/a	
Carbon dioxide, free	ppm	n/r	3.15	2.64 – 3.65	n/a	
Conductivity	umhos	n/r	286	213 – 359	n/a	
Hardness, Calcium	ppm	n/r	68	3 – 132	n/a	
Hardness, Total	ppm	n/r	95	6 – 184	n/a	
Phosphate, total	ppm	n/r	2.09	1.22 – 3.95	n/a	
Sodium	ppm	n/r	34.2	11.4 – 56.9	n/a	
Turbidity ¹	NTU	5 ¹	0.17	0.09 – 0.24	n/a	Soil runoff.

	Unit of Measure	SMCL	Average Level Detected	Range of Level Detected	Violation?	Likely Source of Contamination
Secondary Contaminants						
Chloride	ppm	250	4.90	3.95 – 5.85	n/a	
Iron	ppm	0.3	0.10	nd – 0.39	n/a	
pH, Field	0 - 14 scale	6.5 – 8.5	7.87	6.44 – 8.68	n/a	
Solids, total dissolved	ppm	500	190	148 – 231	n/a	
Sulfate	ppm	250	25.08	7.76 – 42.40	n/a	
Zinc	ppm	5	0.01	0.0064 – 0.0114	n/a	

Violation	Violation Begin	Violation End	Violation Explanation
CCR Report Submission	07/01/2015	07/02/2015	Last year, we incurred a violation because we failed to provide the Delaware Office of Drinking Water the annual CCR by the July 1st deadline. The report was submitted one day late on July 2nd. The violation was resolved on that day.

NOTES

- This MCL applies only to surface water systems. Artesian tests for Turbidity routinely as part of the standard test kit.
- Under the Lead and Copper Rule, we sample for these contaminants once every 3 years.
- Highest 4-quarter average of samples collected and used by the State Division of Public Health for compliance.
- Range includes all samples tested for, whereas highest level detected is based upon the highest 4-quarter average.
- The U.S. Environmental Protection Agency sets the MRDLG for chlorine residual at 4 parts per million (ppm). Artesian Water strives to meet a range between 0.5 ppm and 3 ppm.
- Although EPA sets the "goal" at the same level as the maximum contaminant level for these contaminants, Artesian Water strives to maintain levels lower than the MCL.
- Samples last collected in 2013 for compliance.
- Samples last collected in 2014 for compliance.

Definitions of Terms

- 90TH PERCENTILE** — the 90th highest reading (out of a total of 100 samples), which is used to determine compliance with the Lead and Copper Rule.
- ACTION LEVEL** — the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- MAXIMUM CONTAMINANT LEVEL (MCL)** — the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
- MAXIMUM CONTAMINANT LEVEL GOAL (MCLG)** — the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- MAXIMUM RESIDUAL DISINFECTANT LEVEL (MRDL)** — the highest level of a disinfectant in drinking water. There is convincing evidence that addition of a disinfectant is necessary for the control of microbial contaminants.
- MAXIMUM RESIDUAL DISINFECTANT LEVEL GOAL (MRDLG)** — the level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
- NEPHELOMETRIC TURBIDITY UNIT (NTU)** — a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
- SECONDARY MAXIMUM CONTAMINANT LEVEL (SMCL)** — Non-enforceable guideline which is not directly related to public health, commonly associated with cosmetic or aesthetics within the water.
- NON-DETECTS (ND)** — laboratory analysis indicates that the constituent is not present.
- NOT REGULATED (N/R)** — no MCL identified because these substances are unregulated.
- PARTS PER MILLION (PPM)** — 1 part per million corresponds to 1 minute in 2 years or a single penny in \$10,000.
- PARTS PER BILLION (PPB)** — 1 part per billion corresponds to 1 minute in 2,000 years, or a single penny in \$10,000,000.
- PARTS PER TRILLION (PPT)** — 1 part per trillion corresponds to 1 minute in 2,000,000 years, or a single penny in \$10,000,000,000.
- PICOCURIES PER LITER (PCI/L)** — a measure of the radioactivity in water.

Expected Substances In Drinking Water

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (1-800-426-4791).

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

If You Have A Special Health Concern

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Lead In Drinking Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Artesian is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

Radon, Cryptosporidium & Giardia

Radon is a radioactive gas that is found in nearly all soils. It typically moves up through the ground to the air and into homes through the foundation. Drinking water from a ground water source can also add radon to the home air. The EPA indicates that, compared to radon entering the home through soil, radon entering the home through water will in most cases be a small source of risk. The EPA and the State of Delaware have not yet set standards for monitoring radon in drinking water, although we do expect sampling to become mandatory in the near future. Artesian Water Company is keeping a close eye on the situation and will be sure to comply with any new regulations as required.

Artesian Water Service Facts

Population Served	approximately 301,000
Metered Customers	83,700
Annual Production	7.6 billion gallons
Miles of Main	1,218
Public Fire Protection Hydrants	5,942
Active Wells	191
Storage Capacity	174 million gallons
Water Service Territory	282 square miles
Average cost per day for residential water service	\$1.72

If you have any questions about the contents of this report, please call Artesian at

(302) 453-6930,

toll free at

1 (800) 332-5114

or email at

custserv@artesianwater.com.

Our Customer Service Representatives and Water Quality Department are ready to assist you.

More information about

Artesian is available at

[our website:](http://www.artesianwater.com)

Landlords, apartment managers, businesses, schools, etc. should share this information with others who might not receive this information directly. Consider posting the information in a public place or advise others that the report is available by contacting Artesian by phone or online at www.artesianwater.com.

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